

**Amendments to the Claims:**

Please amend claim 1.

This listing of claims will replace all prior versions, and listing of claims in the application.

### Listing of Claims:

1. (Currently Amended) A method of processing seismic data corresponding to first arrival waves and to waves reflected or converted by the seismic horizons, the seismic data being acquired by means of a <sup>an</sup>omnitilt sensor having at least three geophone components with an angular orientation  $\Theta\Psi$ , wherein estimators are determined which are combinations of these components, wherein various data are isolated, through the estimators, depending on whether they correspond to propagation with reflection or with conversion by the seismic horizons, and wherein operators to be applied to the various components of the sensor are determined for determining a sensor reconstruction, the operators being those that minimize a deviation between reference data and data obtained by applying the estimators to the sensor reconstruction, the operators thus determined being applied to the data acquired.
2. (Previously Presented) A method according to Claim 1, in which, the sensor furthermore including a hydrophone, the reference data for reconstructing a vertical geophone are derived from the data acquired by the hydrophone.
3. (Previously Presented) A method according to Claim 1, in which the reference data for reconstructing a vertical geophone without hydrophone or for reconstructing horizontal geophones are derived from the application of the estimators to one of the geophones of the sensor.
4. (Previously Presented) A method according to Claim 1, wherein the orientation in the horizontal plane of geophone component is obtained by minimizing the estimator of the transverse reflection.
5. (Previously Presented) A method according to Claim 1, wherein the estimators are determined as a function of a model of isotropic propagation or including the azimuthal anisotropy.

6. (Previously Presented) A method of processing seismic data acquired by means of a sensor having at least three geophone components, wherein estimators are determined which are combinations of these components, wherein various data are isolated, through the estimators, depending on whether they correspond to propagation with reflection or with conversion.